

9-3 Factoring Quadratics

Objectives:

- I can factor out a greatest common factor
- I can factor a quadratic expression from standard form.

Factor out the greatest common factor

$$3x^3 - 27x^2 + 9x$$

$$3x(x^2 - 9x + 3)$$

$$2x^4 + 8x^3 - 6x^2 - 10x + 8$$

$$2(x^4 + 4x^3 - 3x^2 - 5x + 4)$$

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Factoring with a leading coefficient of 1

$$x^2 + bx + c$$

Find factors of c that add to b

Factor each quadratic expression.

$$x^2 + 5x + 4$$

$$(x+4)(x+1)$$

$$\begin{array}{r} 4 \\ 4 \overline{) 16} \\ \underline{4} \\ 12 \\ \underline{12} \\ 0 \end{array}$$

$$x^2 + 6x + 8$$

$$(x+4)(x+2)$$

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Factor each quadratic expression.

$$x^2 - 7x + 10 \quad \begin{array}{r} 10 \\ 5 \overline{) 10} \\ -5 \\ \hline 5 \end{array} \quad x^2 - 2x - 8 \quad \begin{array}{r} -8 \\ -4 \overline{) -8} \\ 4 \\ \hline -4 \end{array}$$

$$(x-5)(x-2)$$

$$(x-4)(x+2)$$

$$x^2 + 6x - 12$$

$$(x-3)(x+4)$$

$$\begin{array}{r} -12 \\ -6 \overline{) -12} \\ 6 \\ \hline -6 \\ 3 \overline{) -6} \\ -4 \\ \hline -2 \end{array}$$

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2)

$$5x^4 + 10x^2 - 5$$

$$5(x^4 + 2x^2 - 1)$$

Mar 18-9:12 AM